

packages that combine both voice and data services on the same circuit. The bulk of dedicated access circuits are provisioned at the DS-1 level, but a large number of DS-0 or other sub-DS-1 circuits are used as well. DS-3 or higher capacity SONET facilities such as OC-3 and OC-12 circuits are used in smaller numbers.

The circuits that the ILECs use to provide exchange access, both switched and dedicated, are provisioned over both copper and fiber loops. To serve buildings with higher traffic volumes, the ILECs generally provide exchange access to the building over fiber facilities; fiber can support any digital circuit from DS-0 up to OC-n. To serve buildings with lower traffic volumes, the ILECs rely on their ubiquitous copper network. A copper loop can support not only an ordinary voice-grade connection, but also DS-1 or higher bandwidth circuits using older T1 technology, as well as DSL services using HDSL, ADSL, or SDSL electronics at each end of the copper loop.<sup>19</sup>

Competition in the exchange and exchange access market is still in its infancy in the vast majority of local areas. Whereas the ILECs can offer exchange access to any business customer location over their ubiquitous copper and fiber networks, CLECs can offer exchange access over their own facilities on only a very limited number of routes.

*a) Incumbent LECs' Networks Dwarf Those of Competitive Carriers*

WorldCom is the second-largest purchaser of exchange access from the ILECs. WorldCom also self-provides exchange access to high-density buildings in larger metropolitan areas, and, whenever possible, purchases exchange access from other

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<sup>19</sup> See, e.g., BellSouth Technical Reference TR73600, Issue 6, "Unbundled Local Loop – Technical Specifications," October, 2001 at 26 (DS-1 unbundled loops "may be provisioned via a variety of loop transmission technologies, including, but not limited to, metallic facilities without signal regeneration, metallic facilities with signal regeneration, metallic facilities with HDSL-based technology, or fiber optic transport systems. The technology used will be based upon existing capacities and distance from the central office.") DSL services used by businesses are discussed below in section II.C.

competitive carriers. Because WorldCom operates on a national basis and offers a full range of telecommunications and Internet services to business customers, its experience as a purchaser of exchange access provides a reliable picture of the competitive alternatives available for exchange access.

Competition for exchange and exchange access services is limited because CLEC networks reach only a small fraction of medium and large business customer buildings. In the nation as a whole, there are almost a million commercial office buildings and millions of other commercial, industrial, and government locations.<sup>20</sup> The ILECs can provide exchange access to every one of these buildings (within their respective regions) over their ubiquitous copper and fiber networks. WorldCom, using its own facilities and those of the CLECs with whom it has business relationships, can reach only a few tens of thousands of buildings.<sup>21</sup> There are some additional buildings that are served by smaller CLECs with which WorldCom does not have a business relationship, but these buildings are not competitively significant because (1) the cost of integrating the CLEC's facilities with WorldCom's network may outweigh the benefits of avoiding ILEC services; or (2) in some cases, the CLEC has not demonstrated that it can provision circuits in a timely manner or that its service quality meets WorldCom's standards.<sup>22</sup>

Regardless of how these services are segmented – by dedicated vs. switched access, by circuit type, or by geographical area – competitive alternatives are found on only a small percentage of routes. For example, even if the scope of the analysis is limited to buildings where customers are served using dedicated access, the vast majority

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<sup>20</sup> Statistical Abstract of the United States; 2001, Table 969 (4.7 million commercial buildings, including 744,000 commercial office buildings).

<sup>21</sup> *Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers*, CC Docket No. 01-338, Declaration of Peter H. Reynolds on Behalf of WorldCom, Inc. (*Reynolds confidential ex parte*) (filed under protective order, April 4, 2002) at ¶¶ 5, 9.

<sup>22</sup> *Id.* at ¶ 9, 12.

of such buildings are not connected to CLEC networks, and can therefore be reached only via ILEC facilities.<sup>23</sup>

Competitive alternatives also are limited regardless of the circuit type in question. Although there are more alternatives for higher-capacity circuits, WorldCom alone purchases DS-3 special access circuits from the ILECs to thousands of buildings that are not connected to CLEC networks. The picture is particularly bleak for lower-capacity DS-1 and DS-0 circuits. The vast majority of the buildings where WorldCom serves customers using DS-1 circuits are not connected to CLEC networks.<sup>24</sup> Of course, WorldCom's customers represent only a portion of the routes where the ILECs provide dedicated access.

Even in geographic areas that are considered the most competitive, alternatives are still few and far between. For example, the New York Public Service Commission (PSC) has found that Verizon's network "dwarfs its competitors,"<sup>25</sup> even in LATA 132, which the FCC has consistently characterized as the most competitive area in the nation.<sup>26</sup> While Verizon's network serves 7,364 buildings in LATA 132 over fiber, few CLEC fiber networks serve more than 1,000 buildings.<sup>27</sup> The disparity in buildings served by fiber is magnified by the fact that Verizon's ubiquitous copper loops allow it to provision switched access and DS-1, voice-grade, and other low-speed dedicated circuits to thousands of other customer locations in LATA 132 that CLEC networks do not reach.

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<sup>23</sup> *Id.* at ¶ 6.

<sup>24</sup> *Id.* at ¶ 7.

<sup>25</sup> New York Public Service Commission, Opinion and Order Modifying Special Services Guidelines for Verizon New York Inc., Conforming Tariff, and Requiring Additional Performance Reporting, Case Nos. 00-C-2051, 92-C-0665 (June 15, 2001) (*NYPSC Special Services Order*) at 7.

<sup>26</sup> The FCC found that the high volume of traffic in lower Manhattan "presents special opportunities for the development of competition." *NYNEX Telephone Companies Petition for Waiver*, Memorandum Opinion and Order, 10 FCC Rcd 7445 (1995) at ¶ 40.

<sup>27</sup> *NYPSC Special Services Order* at 7.

The percentage of routes with competitive alternatives is limited even in geographic areas smaller than a LATA or MSA, such as the urban core of large cities. For example, WorldCom has analyzed the scope of alternatives in those wire centers where there are already buildings connected to CLEC networks, in 24 large MSAs.<sup>28</sup> Even in these more competitive areas, CLEC fiber still reaches only a small fraction of the customer locations where WorldCom serves customers over dedicated circuits.<sup>29</sup> If switched access customer locations had been included in WorldCom's analysis, the percentage of customer locations served over CLEC fiber would have been even smaller.

The impact of the lack of competitive choices for exchange access is magnified for enterprise customers. Because only a tiny percentage of business customer locations are served by CLEC fiber, there is almost no chance that *all* of a multi-location customer's buildings can be served over CLEC facilities.<sup>30</sup> Thus, virtually every enterprise customer contract requires exchange access facilities that can be obtained only from the ILEC.

On routes where CLECs do not serve the building in question, CLECs must rely on ILEC facilities for at least the loop portion of the circuit. In many cases, they must rely on ILEC facilities for interoffice transport as well. No CLEC network connects to more than a small fraction of the ILEC central offices in each city.<sup>31</sup>

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<sup>28</sup> *Reynolds confidential ex parte* at ¶ 10.

<sup>29</sup> *Id.*

<sup>30</sup> For example, a bank's corporate data center may be on a CLEC's fiber ring, but it is highly unlikely that more than a handful of the bank's branches will be served by CLEC fiber.

<sup>31</sup> *Reynolds confidential ex parte* at ¶ 14.

*b) It Will Take Time for Competitors to Develop Ubiquitous  
Networks Rivaling those of the Incumbent LECs*

There is little prospect that the percentage of routes with CLEC alternatives will increase at a significant rate. Fundamentally, CLECs' ability to extend their networks to new buildings is limited by the very high fixed and sunk costs of constructing a network extension. As explained in the Declaration of Edwin A. Fleming, the cost of recent WorldCom "building adds" has averaged about \$250,000 per building.<sup>32</sup> And the cost of extending fiber to a building is even greater when the target building is more than a mile from WorldCom's existing network; in these cases, WorldCom would add a building only as part of the construction of a new subnetwork, *i.e.*, a new ring, which is typically a multi-million dollar project.

Because the construction costs are so high, only a small percentage of business customer buildings generate sufficient revenues to justify the investment needed to add them to a CLEC's ring. As explained in the *Fleming Declaration*, a building is usually not even considered for a "building add" unless projected WorldCom customer demand in that building is greater than a DS-3. Of the buildings that are considered, moreover, only a limited number ultimately "prove in" as justifying the costs of being added to WorldCom's network. Virtually all of the buildings that have been added to CLEC networks are high-density buildings such as carrier hotels, ISP points of presence (POPs) and very large office buildings, where there is often demand for several DS-3s or even multiple OC-n circuits. However, the vast majority of business customer buildings do not generate such a high level of demand. For example, Qwest (then U S WEST) has reported that over half of the buildings with DS-1 or above service are served by only a single DS-1.<sup>33</sup>

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<sup>32</sup> See Declaration of Edwin A. Fleming, filed with WorldCom's June 11, 2001 comments in response to the BOC "high-capacity" petitions in CC Docket No. 96-98 and provided here as Attachment B (*Fleming Declaration*) at ¶ 8.

<sup>33</sup> Data provided by U S WEST with its 1998 forbearance petition for Phoenix showed

Even if network construction “proves in,” the pace of “building adds” is limited by building access issues. Specifically, CLECs are severely disadvantaged by the fact that the ILECs have discriminatorily favorable access to buildings. CLECs are usually asked to pay unreasonable fees or high rents for access to multi-tenant environments (MTEs), while the ILECs are able to gain such access for free. One landlord in New York, for example is seeking \$100,000 per year to provide WorldCom access to the landlord's building.<sup>34</sup> Such discriminatory treatment, as well as limitations on available capital and engineering resources contribute to the fact that even larger CLECs, such as WorldCom and AT&T add, at most, a few hundred buildings to their networks each year.<sup>35</sup> And, as discussed in more detail below, the financial difficulties encountered by smaller CLECs make it likely that the pace of future CLEC building adds will be slower than in the late 1990s.

Furthermore, the time required to construct new facilities often precludes CLECs from competing for a customer. Whereas the ILECs, with their ubiquitous networks, usually have facilities already in place, CLECs typically need between six and nine months to construct a network spur to a new building. The process can take significantly

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that, of the 3101 end user buildings in the Phoenix MSA with “high speed” service (DS-1 and above), over half – or 1634 locations – were served by only a single DS-1. *Petition of U S WEST Communications, Inc. for Forbearance from Dominant Carrier Regulation in the Phoenix, Arizona MSA*, CC Docket No. 98-157 (Aug. 24, 1998) at Attachment B, Appendix D.

<sup>34</sup> Other examples abound. In a Northern Virginia building, the landlord asked WorldCom to pay a monthly fee of \$850 and a one-time license administration fee of \$1,700 for space for one rack of equipment in the lower level “meet me room” of the building, even though the market rate for floor space area was about \$340 a month at the time. The request equated to \$1,133 per square foot (using nine square feet for a rack footprint), which is about 45 times the average office lease rental rate. The ILEC, meanwhile, is paying nothing for access to the same building.

<sup>35</sup> AT&T 10-K, April 2, 2001 (on-net buildings increased from 5,800 in 1999 to more than 6,000 in 2000).

longer if, as is often the case, the CLEC encounters roadblocks when negotiating rights-of-way and building access agreements.

The construction of transport facilities to ILEC end offices is equally daunting. As explained in the *Fleming Declaration*, the extension of WorldCom's local network to an additional ILEC central office generally costs at least \$1 million, even when the target central office is close to WorldCom's existing network, and costs substantially more if the target central office is several miles from WorldCom's existing network, as is typically the case.<sup>36</sup> Because the fixed and sunk costs of extending a CLEC network to an additional ILEC central office are so high, it is generally not viable for CLECs to construct transport facilities unless the route is relatively short and the traffic density relatively high. Beyond the urban core and higher-traffic offices in the inner suburbs of cities, CLECs must generally rely on ILEC transport.

***i. Lack of Funding From the Capital Markets Has  
Forced Competitive Carriers to Put their Expansion  
Plans on Hold***

The CLEC industry is currently in the midst of a substantial economic downturn. At the end of 2000, there were 300 CLECs in business; by 2001 that number had dropped to 150,<sup>37</sup> as numerous companies filed for bankruptcy protection.<sup>38</sup> Venture capital funding for competitive telecommunications carriers has dried up.<sup>39</sup> Venture capital investment in the telecommunications industry had declined over 50 percent as of April

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<sup>36</sup> *Fleming Declaration* at ¶¶ 13-14.

<sup>37</sup> *Big Business: Why the Sudden Rise in the Urge to Merge and Form Oligopolies*, WALL ST. J., Feb. 25, 2002.

<sup>38</sup> See, e.g., Yuki Noguchi, *E.spire Files for Bankruptcy*, WASH. POST, Mar. 22, 2001.

<sup>39</sup> Neal Weinberg, *The Economic Slowdown to Affecting Network Spending Equipment, Services and Software, Shaking Some Enterprise Segments to the Core*, NETWORK WORLD, Apr. 23, 2001 at 77 (Weinberg).

2001, compared to Spring 2000.<sup>40</sup> And there is no indication that things have changed for the better in recent months.<sup>41</sup>

The lack of capital funding is a reaction to the fact that, overall, CLECs currently are not profitable and are not expected to be for some time.<sup>42</sup> “In spite of the tens of billions of dollars that have been invested in the upstart carriers, they have been able to capture only 8 percent of the nation’s local telephone lines.”<sup>43</sup>

With the change in the market, there is extremely limited available capital for competitive carriers to extend their networks. The lack of capital is likely to cause delay or cancellation of CLEC expansion plans for physical plant.<sup>44</sup> This, in turn, will reduce deployment of fiber to end-users.<sup>45</sup> If market conditions were better, many carriers that now typically serve and have access to Tier 1 cities, might have built out to second and third tier cities, which are generally underserved.<sup>46</sup>

**ii. Many Assets Remaining from CLEC Bankruptcies  
Cannot be Put to Competitive Use**

Although billions of dollars have been invested by CLECs, much of that investment is sunk and cannot be recovered and put to competitive use. Moreover, one of the most important assets of these firms is human capital. The value of these companies

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<sup>40</sup> Bill Scanlon, *Newsfront: Carrier Retreat Bashes Gear Vendors*, INTERACTIVE WEEK, Apr. 9, 2001 at 12.

<sup>41</sup> Gregory Zuckerman and Deborah Solomon, *Wrong Numbers: Telecom Debt Debacle Could Lead to Historic Proportions - Upstarts Borrowed Like Mad; Now Their Assets Fetch Pennies on the Dollar - A Yard Sale in Cyberspace*, WALL ST. J., May 11, 2001.

<sup>42</sup> Weinberg.

<sup>43</sup> Wanda Avila, *Weathering the Telecom Crisis*, ELECTRONIC PERSPECTIVES, Nov. 2001 (Avila).

<sup>44</sup> Center for Telecommunications and Advanced Technology, 12 THE TELECOMM. REV. 80-81 (2001).

<sup>45</sup> *Id.* at 81.

<sup>46</sup> Avila.



therefore has been further reduced to the extent that their precarious financial condition has caused employees to leave or be laid off.

It is true that switches may be re-deployed and fiber added to the networks of the survivors at low cost and that firms that are able to emerge from bankruptcy will be better able to compete, having been relieved of their heavy debt burdens. The problem is that most of the CLECs that have built transmission facilities have built them in core urban areas where substantial redundant fiber and switching capacity already existed.<sup>47</sup> The key to expanding local competition is to extend networks to customers that do not already have competitive alternatives.

3. The ILECs' Tactics Have Prevented UNE-based Competition From Taking Hold

The 1997 *Access Reform Order's* "market-based" approach to access reform specifically contemplates that CLECs can use unbundled elements to compete in the provision of exchange access services.<sup>48</sup> In practice, however, CLECs' ability to use unbundled elements to compete on those routes where they do not have their own facilities has been severely restricted. First, the Commission has declined to order the ILECs to provide "new" combinations of unbundled elements. Second, the Commission, in the *Supplemental Order Clarification*,<sup>49</sup> adopted rules that made it virtually impossible to convert ILEC special access services to EELs. Third, even when CLECs seek to convert only the channel termination portion of a special access circuit to an unbundled loop, the ILECs generally contend that the *Supplemental Order Clarification* prohibits

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<sup>47</sup> Peter W. Huber, *UNE Fact Report*, Submitted by the United States Telephone Association, CC Docket No. 96-98 (May 26, 1999) at I-10 – I-20 (*Huber*).

<sup>48</sup> *Access Charge Reform*, First Report and Order, 12 FCC Rcd 15982 (1997) at ¶ 262 (*Access Reform Order*).

<sup>49</sup> *Implementation of the Local Competition Provisions of the Telecommunications Act of 1996*, Supplemental Order, 15 FCC Rcd 9587 (2000) (*Supplemental Order Clarification*).

conversion of loops that include multiplexing, since multiplexing is available only as an ILEC service, and services may not be "commingled" with network elements.

In the rare cases in which the ILEC does not claim that it need not provide an element pursuant to the *Supplemental Order Clarification*, the ILECs take other steps to withhold access to the element. Frequently, the ILECs refuse to provision DS-1 loops and other elements because, they claim, facilities are not available. Verizon, for example, contends that it "has no legal obligation to add DS-1/DS-3 electronics to available wire or fiber facilities to fill a CLEC order for an unbundled DS-1/DS-3 network element."<sup>50</sup> By using "no facilities" as a pretext to reject a significant percentage of orders, the ILECs preclude CLECs from relying on unbundled elements as a service delivery mechanism.

CLECs have also sought to offer exchange access services using xDSL transmission over unbundled copper loops. Using this strategy, CLECs could potentially compete with the ILECs on the many routes where the ILECs offer DS-1 and other lower-bandwidth exchange access services using their copper plant. However, as discussed in more detail in section III.D, the ILECs have used a wide variety of tactics to frustrate CLECs' ability to offer xDSL-based services, including the rejection of orders for fiber-fed loops.

### **B. Mass Market Services**

The goal of the Telecommunications Act of 1996 is to bring competition to all telecommunications markets. "The vast majority of access lines in the United States – approximately 144 million out of 174 million total switched-lines – are provided to mass market residential and small business consumers of analog dial tone service, or

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<sup>50</sup> See *Performance Measurements and Standards for Unbundled Network Elements and Interconnection*, CC Docket No. 01-318, Comments of Focal Communications Corporation, Pac-West Telecomm, Inc. and US LEC Corp. (filed Jan. 22, 2002) at 48, n.85, citing Verizon letter, "DS1 and DS3 Unbundled Network Elements Policy," dated July 24, 2001.

‘POTS.’”<sup>51</sup> Consistent with the Act, each of these consumers deserves a choice of local providers. Yet six years after passage of the Act, only a relatively small percentage of these customers have such a choice. Local competition is only now beginning to take hold, provided primarily by carriers using the unbundled network elements platform (UNE-P).<sup>52</sup> UNE-P is the only viable method for providing ubiquitous service to the residential and small business market. Thus, in reviewing its policies on unbundled network elements, it is imperative that the Commission recognize the continued necessity of UNE-P to create competition for local services.

1. UNE-P is Critical to Competition for Residential and Small Business Customers

UNE-P is without question the leading delivery mechanism for competitors to offer service to residential customers.<sup>53</sup> Indeed, as more and more local competitors fail,<sup>54</sup> it is clear that UNE-P is one of the few success stories in local competition. As Chairman Powell acknowledged in a letter to Congress, “. . . even most Bells agree that UNE-P should be available for serving residential customers *everywhere*.”<sup>55</sup> In fact,

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<sup>51</sup> Resolution Concerning The UNE Platform, NARUC 2001 Resolutions and Policy Positions (*NARUC Resolution on UNE Platform*).

<sup>52</sup> The unbundled network elements that comprise UNE-P include the local loop, the network interface device (NID) where the local loop terminates at the customer’s premises, the switch port that connects the local loop to the ILEC’s switch for unbundled local switching, signaling and call-related databases, and the transport of telephone calls from the ILEC switch to another ILEC switch (for local or intraLATA calls) or to an interexchange carrier’s point of presence (for interLATA long distance calls) and OSS. See *Putting the Horse Before the Cart: The History and Future of the UNE Platform*, Z-Tel Technologies, Inc. (Feb. 2001) at p. 2.

<sup>53</sup> *Competitive Local Exchange Carriers Sandblasted By the Economy*, US Emerging Telcos, Deutsche Bank Alex. Brown, p. 16 (Jan. 15, 2002) (*Deutsche Bank Report*).

<sup>54</sup> *Telecomm Industry Faces Reckoning – Buried in Debt, Firms Are Falling In Record Numbers*, WALL ST. J., May 11, 2001.

<sup>55</sup> Powell, Hon. Michael K., Chairman, Federal Communications Commission, letter submitted to Upton, Hon. Fred, Chairman, Subcm. on Telecom. and the Internet, Cmt. on Energy and Commerce (June 15, 2001) at p. 8 (emphasis added); see, FCC Chairman

even BOC out-of-region local entry plans depend upon the continued availability of UNE-P.<sup>56</sup> Indeed, denying UNE-P would virtually doom residential competition.<sup>57</sup>

UNE-P is equally essential to the delivery of service to small business customers, as explained in more detail in Section III.C.2. For a CLEC to provide analog POTS service for a small business customer using its own switches, the ILEC would have to engineer a hot-cut that in today's network frequently involves manual work that cannot be performed on a mass-market basis, the CLEC would have to collocate and backhaul the traffic to its switch, and the customer would have to bear the cost and disruption of these procedures – costs and disruption the customer is not likely to find worthwhile when it is seeking merely to receive analog POTS service. Moreover, until it builds a substantial customer base, a CLEC using its own switches and transport cannot achieve all of the scale economies the ILEC enjoys.<sup>58</sup> These costs, delays, and inconveniences make such

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Michael Powell: Agenda and Plans for Reform of the FCC, Hearing before the Subcm. on Telecom. and the Internet of the Cmt. on Energy and Commerce, House of Representatives, 107<sup>th</sup> Congr., 1<sup>st</sup> S., Serial No. 107-21 (March 29, 2001) at p. 72.

<sup>56</sup> “SBC revealed during the review of its merger with Ameritech that its out-of-region entry strategy was premised on the use of network element combinations to serve the residential and small business market. Further, in Pennsylvania, Bell Atlantic was ordered to file a plan to separate its operation into wholesale and retail affiliates. As part of that filing, Bell Atlantic (now Verizon) proposed to use UNE-P as its principle entry strategy.” Direct Testimony of Joseph Gillan on behalf of the Texas UNE-P Coalition, *et al.*, *Petition of MCI Metro Access Transmission Services, et al., for Arbitration with Southwestern Bell Telephone Company Under the Telecommunications Act of 1996*, Before The Public Utilities Commission of Texas, Docket No. 24542 (*Gillan Texas Direct*) at p. 29, *citing to*, Deposition and Testimony of James Kahan on behalf of SBC, Public Utilities Commission of Ohio, Case No. 98-1082-TP-AMT and Re Structural Separation of Verizon Pennsylvania Inc. Retail and Wholesale Operations, Pennsylvania Public Utility Commission, Docket No. M-00001353.

<sup>57</sup> As a recent financial analysis concluded, “[a]ny changes or elimination of the UNE-P platform would be detrimental to the efforts of some of the largest CLECs attacking the residential market – MCI and AT&T.” *Deutsche Bank Report* at p. 22.

<sup>58</sup> Because the ILECs retain their monopoly grip on mass market customers, the need for the UNE Platform to enable competitors to achieve the incumbents' economies of scope and scale is the same as it has been over the last six years. As the Commission

switch-based POTS service impossible with today's network, given the market share of today's CLECs.<sup>59</sup> As a result, there is almost no facilities-based or UNE-loop competition for small business customers.

For all of these reasons, UNE-P remains at present the only entry strategy that enables competitors to penetrate the residential and small business market – the mass market<sup>60</sup> – at an acceptable cost. As illustrated below, there simply is no viable alternative to UNE-P for broadbased mass market competition.<sup>61</sup>

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recognized in the *Local Competition Order*, "[t]he incumbent LECs have economies of density, connectivity, and scale; traditionally, these have been viewed as creating a natural monopoly ... the local competition provisions of the Act require that these economies be shared with entrants." *Local Competition Order* at ¶ 11. Similarly, in the *UNE Remand Order*, the Commission noted that "[t]he incumbent LECs still enjoy cost advantages and superiority of economies of scale, scope, and ubiquity as a result of their historic, government-sanctioned monopolies. These economies are now critical competitive attributes and would belong unquestionably to the incumbent LECs if they had 'earned' them by superior competitive skills. These advantages of economies, however, were obtained by the incumbents by virtue of their status as government-sanctioned and protected monopolies. We believe that these government-sanctioned advantages remain barriers to the requesting carriers' ability to provide a range of services to a wide array of customers, and that their existence justifies placing a duty on the incumbent carriers to share their network facilities." *UNE Remand Order* at ¶ 86.

<sup>59</sup> Nor can a CLEC adopt a competitive marketing strategy that would enable it to recover its one-time costs through monthly charges. Unlike large businesses, small business customers typically do not sign term contracts committing them to a particular provider for a period of several years.

<sup>60</sup> Mass market customers are residential and small business customers that are reached primarily via telemarketing and other forms of direct marketing and advertising, rather than via dedicated sales teams.

<sup>61</sup> The Commission has emphasized that the ability of requesting carriers to use UNE combinations is integral to achieving Congress's objective of promoting competition in local telecommunications markets. *Application of Ameritech Michigan Pursuant to Section 271 of the Communications Act of 1934, as amended, To Provide In-Region, InterLATA Services in Michigan*, Order, 12 FCC Rcd 20543 at 20718-19 (1997); *Application of BellSouth Corporation, et al. Pursuant to Section 271 of the Communications Act of 1934, as amended, To Provide In-Region, InterLATA Services in South Carolina*, Order, 13 FCC Rcd 539 at 646 (1997).

2. UNE-P Competition Is Developing as Regulatory Hurdles are Reduced

It is only now becoming apparent that UNE-P enables CLECs to compete successfully in the local market. Because UNE-P has only recently been made available at anywhere near cost-based rates, successful competition using UNE-P is in its infancy.<sup>62</sup> Although the Act is 6 years old, competitors only serve 5.5% of residential and small business customers.<sup>63</sup> But the potential for significant growth exists in the near future.

Although the Commission declared that competitors could purchase all the elements in combined form at TELRIC rates in its 1996 *Local Competition Order*, competitors have been effectively denied these economies for years by relentless BOC litigation and anti-competitive practices. The BOCs responded to the Commission's *Local Competition Order* with numerous legal challenges, including a challenge to the availability of UNE-P. Even though the Act specifically contemplated three modes of entry into the local market (facilities-based, UNE-based, and resale), the BOCs argued that UNEs are available only to carriers who also use some of their own facilities to provide service. Additionally, they argued that, even if a new entrant were entitled to all of the elements of the networks as UNEs, the elements must be "physically separated" into discrete pieces, requiring the competitor to combine them.

In 1999, the Supreme Court flatly rejected both of the above BOC arguments. In finding that the Commission's exclusion of a facilities-ownership requirement was proper, the Court explained that the "1996 Act, imposes no such limitation; if anything, it suggests the opposite, by requiring in section 251(c)(3) that incumbents provide access to 'any' requesting carrier."<sup>64</sup> The Court further held that section 251(c)(3) "does not say,

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<sup>62</sup> Indeed, MCI WorldCom was the first company to begin a statewide launch of UNE-P in December 1998 in New York.

<sup>63</sup> *Federal Communications Commission Releases Data on Local Telephone Competition*, News Release (Feb. 27, 2002).

<sup>64</sup> *AT&T. Corp. v. Iowa Utils. Bd.*, 525 U.S. 366, 392-3 (1999) (emphasis added).

or even remotely imply, that elements *must* be provided [in discrete] fashion and never in combined form.”<sup>65</sup> According to the Supreme Court, therefore, there is no question as to whether the Act contemplates UNE-P.

Nonetheless, the lack of certainty regarding access to unbundled elements at reasonable prices, which stemmed from years of litigation, resulted in minimal penetration of the residential and small business local markets by competitors.<sup>66</sup> Even today, the continued availability of UNE-P to serve small business customers remains uncertain given the Commission’s failure to address a motion for reconsideration of the *UNE Remand Order* that seeks to limit UNE-P to residential customers. Competition using UNE-P was further impeded by state commission decisions setting high UNE rates, as well as by BOC OSS and provisioning problems. However, one state commission recognized early on the importance of UNE-P in bringing competition to consumers. The New York Public Service Commission (NYPSC), amidst all the BOC litigation, formed an agreement with Verizon (then Bell Atlantic) that Verizon offer UNE-P. And while the NYPSC, like others, set UNE rates that were far above cost, the rates still allowed competition to develop in parts of the state because retail rates in New York were also high. Recently, the NYPSC has significantly lowered UNE prices, further improving New York’s competitive landscape.<sup>67</sup>

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<sup>65</sup> *Id.* at 394.

<sup>66</sup> See *UNE Remand Order* at ¶ 11 (“[T]he residential and small business markets, and geographic markets outside of major metropolitan areas, have seen minimal competition. This may be due to the uncertainty surrounding the ability of competitive LECs to use reasonably priced unbundled network elements to serve these areas as a result of litigation concerning the Commission’s unbundling rules”).

<sup>67</sup> Federal Communications Commission, Common Carrier Bureau, Industry Analysis Division, *Local Telephone Competition: Status as of June 30, 2001*, Table 9 at 6, 7, and 19 (*February Local Competition Report*). As of June, 2001, 65 percent of local service provided by CLECs in New York was provided to residential and small business customers. See, New York Public Service Commission, *Proceeding on Motion of the Commission to Consider Cost Recovery by Verizon and to Investigate the Future*

The impact of the NYPSC's efforts to ensure access to the UNE-P is indisputable. As the Commission noted, the NYPSC's early initiative enabled WorldCom (then MCI WorldCom) to acquire upwards of 60,000 new local residential customers in New York in a six month period.<sup>68</sup> As of December 2000, New York had the highest percentage for CLEC share of the local market of any state at 20%<sup>69</sup> and that share has now grown to 27%.<sup>70</sup> New York also had the highest percentage for CLEC share of the residential and small business market at 19%, over double the percentage of the state with the next highest level – Texas.<sup>71</sup> Indeed, New York is the only state in which CLECs serve as high a percentage of residential customers as they do of business customers.<sup>72</sup> The relatively high level of local competition in New York demonstrates the importance of UNE-P to local competition.

The importance of UNE-P to competition in the residential and small business market is further demonstrated by Z-Tel's empirical analysis of the data from the

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*Regulatory Framework, and Proceeding on Motion of the Commission to Examine New York Telephone Company's Rates for Unbundled Network Elements, Cases 00-C-1945 and 98-C-1357, Order Instituting Verizon Incentive Plan (Feb. 27, 2002) (Re Verizon-NY).*

<sup>68</sup> *UNE Remand* at ¶ 12.

<sup>69</sup> Federal Communications Commission, Common Carrier Bureau, Industry Analysis Division, *Local Telephone Competition: Status as of December 31, 2000* (May 2001) at Tables 6 & 8 (*May Local Competition Report*).

<sup>70</sup> Currently, 27 percent of the access lines in New York are served by CLECs, and over half of those access lines are provided via UNE-P, a figure that is expected to grow significantly. *Re Verizon-NY* at 31.

<sup>71</sup> See *February Local Competition Report*. ((CLEC total lines (Table 6) \* % CLEC lines Provided to Residential/Small Business Customers (Table 8) / [(ILEC total lines (Table 6) \* % ILEC lines Provided to Residential/Small Business Customers (Table 8)) + (CLEC total lines (Table 6) \* % CLEC lines Provided to Residential/Small Business Customers (Table 8))]. Pricing in Texas effectively precludes use of UNE-P outside of a few big Texan cities. Thus, MCI is only actively marketing local service to about a quarter of the households in Texas.

<sup>72</sup> *February Local Competition Report*, Table 9.



Commission's FCC Form 477 and the *May Local Competition Report*. Z-Tel concluded that where the availability of unbundled local switching is restricted, there is substantially less competition for residential and small business customers.<sup>73</sup> It is also noteworthy that in Texas, competitors achieved a larger share in six months with UNE-P, than they had in five years with UNE-loops (with the CLEC providing local switching).<sup>74</sup> In fact, with the addition of 1,000,000 competitive lines through UNE-P between January 2000 to June 2001, "UNE-P accounts for between 88% and 95% of the net gain in competitive activity in Texas [in that period]."<sup>75</sup>

State commissions have begun to appreciate the importance of UNE-P to the development of residential and small business competition. Commissions in many states have started to reduce the prices charged for unbundled elements. For example, in Ohio, SBC was charging competitors \$111.86 per line for every customer that migrated to a competitor's UNE-P-based service. By contrast, competitors in Michigan were only being charged \$0.35 per customer to accomplish the same change. Ohio regulators eventually reduced the fee to \$0.74.<sup>76</sup> This change contributed to MCI's decision to enter the local market in Ohio this February. States have also gradually facilitated improvement in BOC OSS and provisioning. Moreover, at its November 2001 annual convention, NARUC resolved to support the "universal availability of the UNE-P."<sup>77</sup>

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<sup>73</sup> *An Empirical Exploration of the Unbundled Local Switching Restriction*, Z-Tel Policy Paper No. 3, Z-Tel Communications, Inc. (Nov. 2001); see also *May Local Competition Report*. The NYPSC has taken steps to make UNE-P available to serve small business customers throughout the state, despite the FCC restrictions, in order to enhance competition. *Re Verizon – NY* at p. 24.

<sup>74</sup> *Gillan Texas Direct*, p. 38.

<sup>75</sup> *Id.* at p. 13.

<sup>76</sup> *Familiar Ring, How Effort to Open Local Phone Markets Helped the Baby Bells*, WALL ST. J. (Feb. 11, 2002).

<sup>77</sup> *NARUC Resolution on UNE Platform*.

As noted above, the Commission's initial unbundling rules are only now being implemented in many areas as states are finally beginning to create the conditions necessary for substantial expansion of UNE-P. UNE-P competition is thus in its infancy, and has the potential to grow substantially. WorldCom's MCI Group (MCI) is the largest UNE-P local provider, serving 1.5 million UNE-P customers at the end of 2001.<sup>78</sup> MCI's goal is to "reach 70% of all U.S. households in ILEC territory by the end of this year."<sup>79</sup> UNE-P is the only viable option for achieving that goal.<sup>80</sup>

3. No Viable Alternative to UNE-P Exists to Provide Ubiquitous Competition

UNE-P is the only method technologically capable of reaching mass market customers at an acceptable cost. This is apparent from considering the above data showing that significant residential competition exists only where UNE-P is prevalent. It is also apparent from considering the economic and technological barriers to possible alternative methods of entry.

*a) End-to-End Facilities-Based Competition is Not Yet Viable*

Congress knew that competitors could not possibly enter markets rapidly if they were forced to build duplicative networks "because the investment necessary was so significant."<sup>81</sup> End-to-end facilities-based entry requires significant sunk costs that must be recovered. The economies of scale and scope necessary to make such recovery possible are not available in less dense areas.<sup>82</sup> Consequently, most CLECs that have

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<sup>78</sup> Speech of Wayne Huyard, Chief Operating Officer, MCI Group at NARUC Winter Committee Meetings (Feb. 11, 2002) (*Huyard Speech to NARUC*).

<sup>79</sup> *Id.*

<sup>80</sup> *Id.*

<sup>81</sup> H.R. Conf. Rep. No. 104-458 at 148 (1996).

<sup>82</sup> HAI Consulting, Inc., *The Technology and Economics of Cross-Platform Competition in Local Telecommunications Markets* (April 4, 2002), attached as Attachment A at p. 63 (*HAI Report*).

built actual transmission facilities have built them in core urban areas, almost exclusively for service to large business customers.

The combination of MCI, MFS, and Brooks gave WorldCom the most extensive CLEC assets in the country, at the cost of billions of dollars. Yet, after a comprehensive evaluation, WorldCom concluded that it did not make economic sense to spend the additional capital necessary to attempt to leverage these assets to enter the mass market through end-to-end facilities-based service.<sup>83</sup> A viable business model simply does not exist at this time for the construction of facilities to provide local voice service to residential and small business customers.<sup>84</sup>

The substantial costs of deploying the facilities are further increased by the barriers that CLECs continue to face in gaining access to municipal rights-of-way and MTEs (both essential to facilities-based providers of service). Since the passage of the Telecommunications Act, CLECs' ability to install their facilities has been hampered by municipal ordinances that have imposed excessive, non-cost based fees on access to rights-of-way and have also delayed such access through unnecessary and cumbersome application procedures and bonding requirements.

Additionally, although the Commission established certain requirements to increase CLECs' access to MTEs in its *Competitive Networks Order*,<sup>85</sup> competitive telecommunications service providers have continued to experience difficulties in

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<sup>83</sup> *Huyard Speech to NARUC*.

<sup>84</sup> *HAI Report* at pp.19, 67.

<sup>85</sup> *Promotion of Competitive Networks in Local Telecommunications Markets*, WT Docket No. 99-217, First Report and Order and Further Notice of Proposed Rulemaking in WT Docket No. 99-217, Fifth Report and Order and Memorandum Opinion and Order in CC Docket No. 96-98, and Fourth Report and Order and Memorandum Opinion and Order in CC Docket No. 88-57, FCC 00-366 (released October 25, 2000) (*Competitive Networks Order*).

obtaining non-discriminatory access to MTEs.<sup>86</sup> While some state commissions and state legislatures have adopted non-discriminatory building access requirements, the majority have not. Thus, in most states, competitors are left without building access remedies.

Moreover, to make the investments necessary to provide end-to-end facilities-based service, firms must be able to attract capital. The ability of CLECs to attract capital has been decreasing since the passage of the Act, as “investors have tempered their enthusiasm.”<sup>87</sup> As explained above, many CLECs find themselves in severe financial distress. These firms are cutting back expansion plans and will have difficulty raising new equity.<sup>88</sup> Thus, end-to-end facilities-based entry is not now, and may not in the future be, an efficient mode of establishing ubiquitous competition.<sup>89</sup>

*b) UNE-Loops Alone Are Not Sufficient to Ensure Competition for Mass Market Customers*

The leasing of the loop alone (without switching) also is not at present a viable option for entrants serving the mass market. While UNE-P can be ordered and provisioned through entirely automated processes, provisioning of UNE-loops requires a manual “hot cut” to transfer the loop from the incumbent’s switch to a competing carrier’s switch, unless the customer happens to be served off of a digital loop carrier (DLC) loop.<sup>90</sup> Yet this manual process risks degradation of service and is expensive – a very important factor in a market in which the profit margin is thin and customer churn is relatively high. Customers may migrate away from the CLEC before the CLEC recovers installation and non-recurring costs. Most CLECs do not yet have a sufficient base of

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<sup>86</sup> See discussion above in Section II.A.2.b.

<sup>87</sup> *Deutsche Bank Report* at p. 11.

<sup>88</sup> *HAI Report* at pp. 65-66.

<sup>89</sup> *Id.* at p. 67.

<sup>90</sup> This is so regardless of whether the switch-based carrier has just won the customer or wishes to migrate the customer’s UNE-P service to service via its own switch.

mass market local customers to warrant purchasing their own switches given the tremendous economies of scope and scale inherent in switching. Consequently, eliminating UNE-P would likely cripple competition for mass market customers because, if CLECs were denied access to UNE-P, they likely would withdraw from the residential and small business market.

*c) Cable Telephony Is Not a Significant Alternative*

The impact of cable telephony on the national market for local exchange service is extremely limited. Only 1.9 million (or less than two percent) of the roughly 118 million residential and small business access lines in the United States are provided over cable.<sup>91</sup> The limited cable competition that does exist is concentrated in certain service areas. Most residential and small business customers do not even have the option of using cable telephony.<sup>92</sup> This is unlikely to change until, and unless, IP telephony becomes a viable alternative to circuit switched telephony.

Today, circuit-switched technology is the only technology available for cable operators seeking to offer primary-line telephone service in direct competition with an incumbent LEC.<sup>93</sup> But cable operators have performed the upgrades necessary for subscribers to receive cable telephony for only 11.7 million homes, approximately 11% of the 103 million telephone households across the U.S.<sup>94</sup> More importantly, even where the capability to provide cable telephony now exists, only a few operators are aggressively using it.<sup>95</sup> This is because of the high incremental cost of providing cable telephony, the promise of new technologies that would reduce cost and simplify

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<sup>91</sup> *HAI Report* at p.21.

<sup>92</sup> *Id.* at pp. 21-23.

<sup>93</sup> *Id.* at p. 30.

<sup>94</sup> *Id.* at p. 23.

<sup>95</sup> *Id.* at p. 26.

operations, and the perception that other advanced services, such as digital television and broadband Internet, provide better revenue opportunities.<sup>96</sup> Indeed, digital television has 7.5 times the penetration of cable telephony.<sup>97</sup>

IP telephony, sometimes referred to as Voice over IP (VoIP), is the only reasonable hope for significant market penetration by cable providers. VoIP relies on the digitized and packetized voice signals that may be carried on a variety of underlying physical networks.<sup>98</sup> Although progress on IP telephony continues, much of the equipment that is required to support the service is still being tested, and no commercial deployment exists, at least for primary-line service.<sup>99</sup> It is premature to make policy decisions based on the presumption that VoIP will make cable telephony a significant market force.<sup>100</sup>

Moreover, even if cable telephony were pervasive, it still would not create a competitive marketplace. Cable competition would merely produce a duopoly. Such a duopoly would not drive prices to competitive levels nor produce high quality telephony with innovative features for consumers.<sup>101</sup> ILECs and cable companies would have both the incentive and the ability to engage in coordinated behavior, raising prices above competitive levels. The high visibility of prices in the telephone market would make it difficult for the ILECs or cable companies to cheat on these price agreements. And because the ILECs and cable companies would be competing across multiple markets,

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<sup>96</sup> *Id.* at pp. 26-27.

<sup>97</sup> *Id.* at p. 25, Figure V-4.

<sup>98</sup> *HAI Report* at p. 32.

<sup>99</sup> *Id.* at pp. 32; *see also* Fred Dawson, *Hold the Phone, Delivery of IP Voice Over Cable Posted Back*, March 2002 at 56.

<sup>100</sup> *HAI Report* at p. 38.

<sup>101</sup> *Id.* at pp. 82-84.

they would be less likely to compete aggressively in one market for fear of retaliation in another market.<sup>102</sup>

Thus, although competition from cable providers may be beneficial, it certainly will not be sufficient. There would, however, be less concern about a duopoly of end-to-end facilities-based providers of local services if competitors could rely on nondiscriminatory access to UNEs to provide service to their customers.<sup>103</sup>

*d) Wireless Is Not a Meaningful Alternative*

Wireless service also is not a competitive alternative to wireline service for mass market customers. The Commission previously reached just this conclusion in evaluating PCS service in the BellSouth region.<sup>104</sup> In denying BellSouth's second application for section 271 authorization in Louisiana, the Commission explained that in order to be a competitive alternative, a service must be used to replace, not merely supplement, wireline service offered by the ILECs.<sup>105</sup> Today only 2.2% of all wireless customers use wireless phones as their only phone.<sup>106</sup> Indeed, the attraction of wireless service as a substitute for wireline service likely will be limited to a certain demographic slice of the market – young singles who are rarely at home.<sup>107</sup>

In addition to the lack of evidence of significant demand for wireless services as a substitute for wireline services, technological and other barriers preclude such

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<sup>102</sup> *Id.* at p. 83.

<sup>103</sup> *Id.* at p. 84.

<sup>104</sup> *Application of BellSouth Corporation, et al. for Provision of In-Region, InterLATA Services in Louisiana*, Order, 13 FCC Rcd 20599 (1998) at ¶ 22 (*LA II 271 Order*).

<sup>105</sup> *Id.* at ¶ 31.

<sup>106</sup> Yuki Noguchi, *More Cell-Phone Users Cut Ties to Traditional Service*, WASH. POST, (Dec. 28, 2001) at p. E01.

<sup>107</sup> See TRAC, *Consumer Tips for Cutting The Cord*, available at <<http://www.trac.org/tips/wiretips.html>>.

substitution from occurring on a mass scale. Airwave spectrum is very limited, and zoning and other regulatory requirements often make it difficult for wireless carriers to build new cell towers.<sup>108</sup> According to a technical capacity analysis performed by HAI Consulting, existing and planned wireless technologies are incapable of serving the combined fixed wireless (currently served by wireline) and mobile demand for service.<sup>109</sup>

As indicated in the *HAI Report*, a wireline subscriber generates about three times the busy-hour traffic of a wireless subscriber.<sup>110</sup> Thus, for every wireline user that a wireless provider seeks to serve via fixed wireless services, it must devote three times the network capacity of a wireless subscriber. Because one fixed wireless customer on average displaces three mobile wireless customers, and the average local wireless service bill is higher per subscriber than the average local wireline bill, the opportunity cost of using spectrum to offer fixed services to a customer is substantial.<sup>111</sup>

The current structure of the wireless industry provides another basis for skepticism that this platform will challenge the ILEC monopoly. The wireless industry is increasingly controlled by the ILECs. These firms do not want to cannibalize their landline business. Therefore, they have no incentive to engineer their systems and market their services to provide direct substitution for landline networks.<sup>112</sup>

### **C. Broadband Services**

The Commission has recently focused on a regulatory framework to promote the availability of broadband services in a trio of proceedings, including the *Broadband Non-*

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<sup>108</sup> Yuki Noguchi, *supra* note 106.

<sup>109</sup> *HAI Report* at p. 38.

<sup>110</sup> *Id.* at p.39.

<sup>111</sup> *Id.* at p. 42 (estimating that the opportunity cost to a wireless carrier is about \$100 per month per fixed wireless subscriber).

<sup>112</sup> *Id.* at p. 51.



*Dominance*<sup>113</sup> and the *Broadband Framework*<sup>114</sup> proceedings as well as the *UNE Triennial Review*. As detailed above, both business and residential customers use “broadband” services for various applications.<sup>115</sup> Given the Commission’s recent focus on broadband, rather than discussing these high-speed services in the context of other business and residential services, WorldCom addresses broadband services separately.

#### 1. Business Services

As noted, the Commission in the past has separated users of telecommunications services into two broad categories: the larger business market and the mass market, which includes both residential consumers and small businesses. For broadband services, however, these categories are too broad. As explained below, business customers – regardless of size – demand a higher quality of broadband services than that demanded by residential consumers. As a result, residential-grade services, even when available to small and medium enterprises (SMEs), small or home offices (SOHOs), or branch offices of larger enterprise customers, do not meet the needs of business customers.

Larger businesses often have numerous smaller business locations, “includ[ing] retail stores, automobile dealerships, travel agencies, bank branches, transportation and dispatch facilities, among others,” that require high-speed access to corporate data

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<sup>113</sup> *Review of Regulatory Requirements for Incumbent LEC Broadband Telecommunications Services*, CC Docket No. 01-337, Notice of Proposed Rulemaking (Dec. 20, 2001) (*Broadband Non-Dominance*).

<sup>114</sup> *Appropriate Framework for Broadband Access to the Internet Over Wireline Facilities*, CC Docket No. 02-33, Notice of Proposed Rulemaking (Feb. 15, 2002) (*Broadband Framework*).

<sup>115</sup> WorldCom uses the term “broadband” to denote DSL and its equivalents, including any service from 200 kbps to three Mbps (or two DS-1s). See *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996*, CC Docket 98-146, Third Report, ¶ 9 (Feb. 6, 2002) (*Section 706 Third Report*) (defining advanced services as supporting speeds above 200 kbps). Higher speed services are treated herein as high capacity services, and are discussed above in Section II.A.

networks.<sup>116</sup> Along with SMEs and SOHOs, these business users demand a level of security and reliability that cannot be met by residential offerings.<sup>117</sup> For example, service outages that may be a mere nuisance for a residential consumer are likely to result in losses unacceptable to a business customer that is dependent on broadband services to conduct business.<sup>118</sup> To meet these quality demands, providers offer “service level agreements” or other guarantees typically not demanded by residential users. Similarly, higher levels of security are required for the secure transmission of commercially sensitive information.<sup>119</sup> Given these different demand patterns, the Commission must separately consider the alternatives available for business and residential broadband services.

*a) DSL Remains The Option of Choice For Business Broadband Users*

DSL remains the leading choice of broadband technology for business subscribers – 59% view DSL “as the most convenient technology to adopt.”<sup>120</sup> Thus, business subscribers represent a significant growth opportunity for DSL providers. Indeed, although business DSL represents only about 17% of the subscriber market worldwide, it accounts for 58% of total DSL revenues.<sup>121</sup>

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<sup>116</sup> Comments of Ad Hoc Telecommunications Users Committee at 7, CC Docket No. 01-337 (filed March 1, 2002) (Ad Hoc Broadband Comments).

<sup>117</sup> *Id.* at 7-8.

<sup>118</sup> *Id.* at 8.

<sup>119</sup> *Id.*

<sup>120</sup> Michael Pastore, *Business Installations Will Lead DSL Providers*, available at <[http://cyberatlas.internet.com/markets/broadband/article/0,,10099\\_932901,00.html](http://cyberatlas.internet.com/markets/broadband/article/0,,10099_932901,00.html)>.

<sup>121</sup> Press Release, Cahners In-Stat, “Business DSL Worldwide: The Buck Starts Here” (Dec. 3, 2001), available at <<http://www.instat.com/press.asp?ID=37&sku=TX0110SP>>.

Despite business customers' demand for DSL, incumbent LECs today do not offer business-grade DSL unbundled from Internet access services.<sup>122</sup> Nor are there currently widespread competitive alternatives to the ILEC for these services. In fact, Ad Hoc's members report that viable competitive alternatives to incumbent LEC data services for "Category A" (defined as capacity of 12 DS-0 channels, *i.e.*, 760 kHz or less) and "Category B" (defined as capacity of at least one, but not more than four, DS-1s) were available at fewer than 10% of members' locations.<sup>123</sup>

As discussed below, WorldCom and other competitive carriers seek to offer business-grade DSL services, but their ability to do so is completely dependent on the availability of unbundled network elements. For example, WorldCom offers an Enterprise DSL product to businesses that allows them to access WorldCom's frame relay and ATM services utilizing DSL.<sup>124</sup> In addition, WorldCom provides businesses with high-quality, reliable high-speed Internet access services.<sup>125</sup> WorldCom's business DSL products are designed to meet the needs of different businesses that demand high-speed access services. However, WorldCom cannot offer its innovative products to businesses without access to UNEs – especially the loop.<sup>126</sup>

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<sup>122</sup> See Ad Hoc Broadband Comments at pp. 23-24 (incumbent LECs' refusal to unbundle DSL from Internet access services has prohibited low-volume business customers from cost effectively obtaining broadband services). The sole exception appears to be SBC's offering of its Remote Local Area Network, or "RLAN," service. As Ad Hoc notes, however, that service is provided on an extremely limited basis with only about 4,600 lines in service. See *id.* at 24 (citing SBC).

<sup>123</sup> *Id.* at 15.

<sup>124</sup> Declaration of Ian Graham, provided here as Attachment C (*Graham Declaration*) at ¶ 10.

<sup>125</sup> *Graham Declaration* at ¶ 11.

<sup>126</sup> See *id.* at ¶¶ 30-37.

*b) Neither Cable Modem Nor Wireless Technologies are an  
Effective Substitute For Business-Grade DSL*

*i. Cable Modems*

Cable modem service is not well-suited for most business customers for a number of reasons, including limitations in geographic availability as well as insufficient service quality, reliability, and security. Most cable companies target their buildouts towards residential areas; thus, cable-based high-speed Internet access is rarely available to business customers.<sup>127</sup> J.P. Morgan recently reviewed growth prospects for the business cable modem marketplace, and concluded that while growth percentages will be high, actual market penetration will be minimal compared to DSL for businesses. By 2006, J.P. Morgan predicts that 112,000 businesses will be served by cable modems, compared to 4,446,000 businesses served by DSL.<sup>128</sup>

Cable modem service also suffers from service quality and reliability problems, stemming from its shared bandwidth architecture. In a business environment, where many users are on the same network at a peak time, cable modems lose signal strength. Shared networks also pose security risks to business customers. Without appropriately configured firewalls, cable modem users could see other users and their locations, and access any shared files simply by clicking on the "Network Neighborhood" icon on their computers.<sup>129</sup> Analysts have noted that "its variable speed, lack of vendor guarantees, and other reliability concerns have made cable modem service an unpopular choice for businesses."<sup>130</sup>

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<sup>127</sup> See, e.g., Tod A. Jacobs, J.P. Morgan Securities Inc., *Industry Analysis: Telecom Services 2001, A Comprehensive Long-Term Forecast of the U.S. Telecom Services Industry* (Nov. 2, 2001) at 32 (noting that the broadband business market "is largely expected to belong to DSL") (J. P. Morgan).

<sup>128</sup> J.P. Morgan, p. 33.

<sup>129</sup> Bradley Mitchell, *Computer Networking: DSL vs. Cable Modem Comparison*, About.com (last visited Feb. 22, 2002).

<sup>130</sup> Barbara Krasnoff, *Bet on Broadband*, SmallBusinessComputing.com (Nov. 29, 2001).

Even if cable modem service providers were to overcome these bandwidth, security, and access hurdles, other issues are hindering its deployment. For example, cable modem equipment is still largely unavailable for business networks. Cisco manufactures integrated cable modem routers for business use; however, these routers can only be used where the underlying cable modem services are compatible with the DOCSIS standard.<sup>131</sup> Cable access to multi-tenant environments (typically found in commercial settings) also poses challenges to broadband market entry. Building owners typically control selection of the sole broadband provider – which often involves payment or other consideration to gain access to a building.<sup>132</sup> As a result of these limitations, cable modem service is not a competitive alternative for broadband access to businesses.

## *ii. Wireless*

Wireless mobile data services are not a significant threat to wireline services. Second generation mobile wireless services can support only modest data rates, typically about 10 kbps.<sup>133</sup> Although third generation services will offer data rates exceeding 144 kbps, these rates represent an overall radio channel data rate. Thus, the average per user rate will be much lower, probably between 50 kbps and 100 kbps.<sup>134</sup> As a result, capacity and service quality constraints make it unlikely that significant numbers of business broadband service users will switch to wireless services.<sup>135</sup>

Fixed wireless suffers from similar constraints. At best, fixed wireless service providers have sufficient capacity to serve only 5-10% of wireline broadband subscribers

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<sup>131</sup> *Small Business Solutions*, Cable-modem.net (last visited Feb. 22, 2002).

<sup>132</sup> Amy H. Blankstein, *How Fast Is Your Building*, SmallBusinessComputing.com (Jan. 1, 2001).

<sup>133</sup> *HAI Report* at p. 49.

<sup>134</sup> *Id.* at p. 50.

<sup>135</sup> *Id.*

in larger markets.<sup>136</sup> Moreover, in order to provide service, external antennas must be affixed to the building being served. The inability to gain access to buildings to install this equipment has hindered carriers' ability to provide fixed wireless service to many businesses. Until such problems are addressed, wireless data services will not constitute a viable alternative to business-grade DSL.

## 2. Residential Services

ISPs, the principal customers for residential-grade broadband services, have four potential options: incumbent LECs, competitive LECs, wireless providers, and cable companies.<sup>137</sup> As explained below, the only real option independent ISPs may have is to purchase high-speed services from competitive LECs, which cannot provide service without access to unbundled network elements from incumbent LECs.

### a) *DSL*

Incumbent LECs provide DSL to ISPs – including the incumbent LECs' own ISP operations.<sup>138</sup> The ISPs, in turn, market, sell, and provide retail high-speed Internet access over a DSL platform directly to end-user customers.<sup>139</sup> While incumbent LECs

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<sup>136</sup> *Id.* at p. 78.

<sup>137</sup> Nascent offerings by wireless and satellite providers are not viable alternatives for reaching the vast majority of residential customers. *HAI Report* at pp. 76-79.

<sup>138</sup> Incumbent LECs also provide these services to unaffiliated ISPs pursuant to their obligations under the FCC's longstanding *Computer II* and *Computer III* rules. See generally, *In the Matter of Amendment of Section 64.702 of the Commission's Rules and Regulations*, Docket No. 20828 (*Computer II*); *In the Matter of: Amendment of Sections 64.702 of the Commission's Rules and Regulations*, CC Docket No. 85-229 (*Computer III*).

<sup>139</sup> The ISPs' retail duties include provisioning consumer premises equipment (CPE) and wiring, providing customer service, and assuming sole responsibility for marketing, ordering, installation, maintenance, repair, billing, and collections vis-à-vis the end-user subscriber. *In the Matter of Deployment of Wireline Services Offering Advanced Telecommunications Capability*, DD Docket No. 98-147, Second Report and Order, 14 FCC Rcd 19237 (rel. Nov. 9, 1999) (*Bulk DSL Order*) at ¶ 15. The incumbent LECs' ISPs also offer and provide email boxes, web storage space, domain name registration, search engine registration, and 24-hour technical support.

sell DSL to independent ISPs, most ILEC DSL lines are provided through the incumbents' ISP affiliate.<sup>140</sup> Indeed, independent ISPs, such as WorldCom's UUNET division, have had trouble negotiating fair terms with the ILECs.<sup>141</sup> Competitive LECs that offer broadband services have arrangements with ISPs that are similar, though not identical, to those ISPs have with incumbent LECs. Competitive LECs like WorldCom and Covad, for example, provide DSL functionality either as a wholesale input to ISPs, or packaged with information services and sold as high-speed Internet access.<sup>142</sup> Because there is no other last-mile alternative, competitive LECs depend on certain incumbent LEC-provided network elements, such as DSL-ready local loops, to provide broadband services.<sup>143</sup>

Competitive LECs are falling further and further behind the incumbent LECs. According to the Commission's most recent Section 706 report, as of June 30, 2001, incumbent LECs controlled 93 percent of all ADSL lines, compared to only 7 percent for competitive LECs.<sup>144</sup> Although competitive LECs in the past have experienced positive subscriber growth, in the fourth quarter of 2001, they *lost* DSL customers.<sup>145</sup> At the same

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<sup>140</sup> Between 78 and 87% of all ILEC DSL lines are provided to their affiliated ISPs. See Sue Ashdown, *Can America Compete With Bell Lobbying Armies*, INTERNET INDUSTRY MAGAZINE, Fall 2001 at pp. 74-75.

<sup>141</sup> *Graham Declaration* at ¶¶ 23, 41; see also *California ISP Association v. Pacific Bell Telephone Co.*, Case No. 01-07-001, before the California Public Utilities Commission (filed July 25, 2001).

<sup>142</sup> See *Graham Declaration* at ¶ 12; see also [www.covad.com/companyinfo](http://www.covad.com/companyinfo); Julia Angwin, *Covad Provides a Saga of Shakeout Survival*, WALL ST. J., Feb. 28, 2002 at B7 (explaining that Covad is beginning to sell DSL lines directly to small businesses).

<sup>143</sup> *Graham Declaration* at ¶¶ 30-37.

<sup>144</sup> *Section 706 Third Report* at ¶ 51.

<sup>145</sup> See TeleChoice DSL Deployment Summary — updated 2/11/02, available at <[http://www.xdsl.com/content/resources/deployment\\_info.asp](http://www.xdsl.com/content/resources/deployment_info.asp)> (CLEC xDSL declined from a 2001 high of 539,415 lines in service in the third quarter to 484,060 in the fourth quarter); see also *North American DSL Market Reaches 5.5 Million, According to TeleChoice* (Feb. 12, 2002), available at <<http://www.xdsl.com/content/tcarticles/wp021202.asp>> (ILECs increased their fourth quarter share of xDSL lines in service by

time, incumbent LECs' DSL customer base continued to grow rapidly.<sup>146</sup> Without unbundled access to the network elements identified by WorldCom, competitive LECs cannot hope to compete with the incumbents in the provision of broadband services. CLECs' ability to provide DSL services to ISPs is critical to the continuing viability of independent ISPs,<sup>147</sup> particularly if the incumbent LECs succeed in their attempt to be relieved of their obligation to provide basic telecommunications services to unaffiliated ISPs on a non-discriminatory basis.<sup>148</sup>

*b) Cable Modem*

Cable companies, such as AT&T Broadband and AOL Time Warner, offer combinations of Internet access (most often provided by an ISP affiliated with the cable company) and cable modem functionality (provided by the cable company) to residential end-user customers. However, certain factors make cable broadband services an inadequate alternative to incumbent LEC DSL, both for ISPs and competitive LECs.

First, cable companies have no general legal obligation to provide ISPs with nondiscriminatory access to underlying transport services.<sup>149</sup> Second, cable companies are not obligated to unbundle their broadband platforms or provide last-mile facilities to competitive LECs in order to allow them to offer broadband services to ISPs. Thus,

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16% over the third quarter, while the CLEC sector as a whole contracted); *Section 706 Third Report*, ¶ 51, n.110.

<sup>146</sup> *Id.*

<sup>147</sup> See *Graham Declaration* at ¶¶ 40-41.

<sup>148</sup> See *Broadband Framework NPRM*.

<sup>149</sup> Because of merger conditions, AOL Time Warner is required to provide nondiscriminatory access to a limited number of unaffiliated ISPs. See *Applications for Consent to the Transfer of Control of Licenses and Section 214 Authorizations by Time Warner Inc. and America Online, Inc., Transferors to AOL Time Warner Inc., Transferee*, Memorandum Opinion and Order, 16 FCC Rcd 6547 (2001) (*AOL Time Warner Merger Order*). Cable companies are not subject to obligations similar to those imposed on incumbent LECs in the *Computer II* and *Computer III* proceedings, however. As a result, very few independent ISPs serve customers over cable facilities.



competition from cable companies does not provide an adequate alternative to incumbent LEC broadband services.<sup>150</sup>

*c) Wireless and Satellite*

Nascent offerings by wireless and satellite providers are not viable alternatives for reaching the vast majority of residential customers. As explained in the *HAI Report*, the high cost and delay associated with satellite-delivered broadband services, coupled with line-of-sight and other technical limitations, render it “at best an alternative suited mainly for customers in rural or other areas where no other broadband alternative is available.”<sup>151</sup> Due to the restrictions discussed above, fixed wireless broadband services are not expected to offer a viable alternative for any but a small share of residential customers.<sup>152</sup>

**III. EFFECTIVE UNE RULES ARE ESSENTIAL TO REALIZING THE PRO-COMPETITIVE GOALS OF THE COMMUNICATIONS ACT**

**A. The Commission Should Adhere to the Framework Established in the Act**

If the Commission is to realize the vision of robust competition that underlies the 1996 amendments to the Communications Act, it must ensure that its UNE rules enable rival carriers to compete with the incumbent LECs. Without meaningful access to UNEs, competition in the local market will grind to a halt. UNEs are therefore essential to achieving the Commission’s goals of competition, deregulation and consumer choice.

**1. Little Intermodal Competition For Local Services Exists Today**

The Commission will not be able to deregulate the incumbent LECs unless it first takes the steps necessary to allow competition to develop for local services. The incumbent LECs cannot be deregulated until they have shown that sufficient competition

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<sup>150</sup> See *HAI Report* at p. 75 (noting that significant numbers of consumers may have access to only one supplier of broadband services).

<sup>151</sup> See *id.* at p. 78.

<sup>152</sup> *Id.*

exists to prevent them from exercising market power. This showing requires evidence that there are actual competitors providing service with ample capacity to serve the incumbent LECs' customers, thereby constraining the incumbents' ability to raise prices in the local market.

Competition in the local markets today depends on the ability of competitive LECs to obtain key UNEs in a reasonable and non-discriminatory manner and at cost-based rates, as required by the Act. The relevant data shows that wireline CLECs still depend almost entirely on at least some ILEC facilities to compete. In the residential and small business markets, there has been little competitive entry, and what there is relies heavily on ILEC facilities, typically through so-called "UNE-P" arrangements.<sup>153</sup> Even where there is a modicum of wireline facilities-based competition – in dense urban areas where economies of scale and scope make such competition possible – competitors still rely heavily on ILEC-supplied loop facilities to connect end users to the ILEC network.<sup>154</sup>

Reliance on ILEC facilities is neither surprising nor discouraging: the telephone network is characterized by massive economies of scale and scope, and unless there is some way for competitors to share in those economies, it will be difficult, if not impossible, for competition to take root. And, while intermodal competition holds promise, it does not yet offer alternatives sufficient to limit ILEC market power in any meaningful way.<sup>155</sup> While the Commission may sensibly take steps to promote intermodal competition, it would be irrational for the Commission to act as if competitive alternatives to the ILECs already exist.

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<sup>153</sup> See *infra* Section II.B.2.

<sup>154</sup> See *infra* Section II.B.3.

<sup>155</sup> See *HAI Report passim*.